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EXAMINER	
BORSETTI, GREG	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,389	NAM ET AL.	
	Examiner	Art Unit	
	GREG A. BORSETTI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 2-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 2-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 2-9 are pending.

2. Claims 2-9 have been amended.

Response to Arguments

3. Applicant's arguments filed 10/15/2008 have been fully considered but they are not persuasive.

4. Applicant argues "DeJaco does not teach or fairly suggests deciding an interval of audio data to be encoded into a low bit rate for adjusting amplitude (see claims 4 and 6-9) of the audio data of the decided interval" (Remarks, Page 9, ¶ 3) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Malvar was supplied, in combination with DeJaco, to teach that limitation. The argument is not persuasive.

5. Applicant argues "Malvar fails to overcome the deficiencies of the primary reference, DeJaco. The Examiner asserts that Malvar discloses adjusting the amplitude of the audio data Malvar, however, does not disclose adjusting the amplitude of audio data of the decided interval, which is to be encoded in a low bit rate in the codec, before the audio data is processed by the codec, as claimed. Malvar merely describes automatic gain control as an example of enhancement operators incurring a processing

delay that will be added to the codec delay, without describing its detailed function (Malvar col. 2, lines 41-56)." (Remarks, Page 10, ¶ 2) The examiner disagrees. Referring to Malvar, column 2, lines 41-51, Malvar provides both amplitude adjustment and performing it prior to processing the audio data by the codec. This is found in "prior to processing by the codecs ... other enhancement operators may include automatic gain control..." Applicant further argues that the detailed functions of the enhancement operators are not described. The examiner contends that it would have been obvious to someone of ordinary skill in the art at the time of the invention to understand how automatic gain control is used, i.e. adjustment of amplitude, and that it meets the claim limitation in its broadest reasonable interpretation by obviousness.

6. Applicant argues "DeJaco, however, does not disclose classifying the audio data into cases where the audio data includes monophonic sound and polyphonic sound." (Remarks, Page 10, ¶ 4) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Davis was supplied, in combination with DeJaco and Malvar, to teach that limitation. The argument is not persuasive.

7. Applicant argues "The Examiner asserts Malvar discloses performing AGC preprocessing. Malvar, however, does not disclose performing AGC preprocessing of frames of audio data classified as based on a characteristic of audio data." (Remarks, Page 11, ¶ 2) In response to applicant's arguments against the references individually,

one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). DeJaco is used to classify audio data based on a characteristic and Malvar is provided to teach AGC processing. Therefore the combination of DeJaco and Malvar teach performing AGC preprocessing of frames of audio data classified as based on a characteristic of audio data. The argument is not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 6 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite "means for" where there is not corresponding definitive "means" defined in the specification. The specification generally describes a codec, but does not further describe what the structure of the codec is comprised of.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 2-9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

10. The claims define non-statutory processes because they merely manipulate an abstract idea (mathematical algorithm), a series of steps to be performed on a computer. Claims 2-9 reviewed in light of the specification simply recite a mathematical algorithm which preprocesses audio data and encodes the data. The encoding step could pertain to an entirely software embodiment and therefore the method, as claimed, is a mathematical calculation (algorithm) where the claims do not produce a useful, tangible, and concrete result because the claims are directed only to a manipulation of numbers. If the acts of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter (Benson, 409 U.S. at 71-72, 175, USPQ at 676).

Furthermore, claims define nonstatutory processes if they simply manipulate abstract ideas (Warmerdam, 33 F.3d at 1360,31 USPQ2d at 1759). As for guidance to areas of statutory subject matter, see 35 U.S.C. 101 Interim Guidelines (with emphasis of the Clarification of Interim Guidelines For Examination of Patent Applications for Subject Matter Eligibility); as an example, in Alappat, the claimed output smooth waveform (consisted of lighting pixels on an oscilloscope/display) is a useful, concrete, tangible, final result; in Arrhythmia, the claimed useful, concrete, tangible, final result represented the condition of a patient's heart; in State Street, the claimed useful, concrete, tangible, final result was data output that represented a final share price

momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.

11. Claims 6 and 9 are written in means-plus-function format and for the purpose of this rejection are being treated as though they were method claims. The courts have held that such treatment is acceptable:

"If the functionally-defined disclosed means and their equivalents are so broad that they encompass any and every means for performing the recited functions, the apparatus claim is an attempt to exalt form over substance since the claim is really to the method or series of functions itself. In computer-related inventions, the recited means often perform the functions of "number crunching" (solving mathematical algorithms and making calculations). In such cases the burden must be placed on the applicant to demonstrate that the claim is truly drawn to specific apparatus distinct from other apparatus capable of performing the identical functions."

If this burden has not been discharged, the apparatus will be treated as if it were drawn to the method or process which encompasses all of the claimed "means." See In re Abele 214 USPQ 682, 688 (CCPA 1982); Ex parte Akamatsu, 22 USPQ 2d 1915, 1920; and Ex parte Alappat, 23 USPQ 2d 1340, 1344.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeJaco (5,742,734) in view of Malvar (6,029,126).

As per claims 4 and 6, DeJaco discloses a method and apparatus for preprocessing audio data to be processed by a codec having variable coding rate, comprising the steps of:

deciding an interval of audio data that is to be encoded in a low bit rate in said codec (column 3 lines 56-65).

DeJaco does not explicitly disclose adjusting the amplitude of audio data of the decided interval before the audio data is processed by the codec, such that the audio data in the interval may be encoded in a bit rate higher than or equal to said low bit rate when processed by the codec. However, DeJaco does disclose that previous speech coding systems do not correctly determine when low energy unvoiced speech is input (column 1 lines 40-52). The systems often mistake low energy unvoiced speech as noise and encode the signal at a lower bit rate, causing degradation in speech quality during speech reconstruction (column 1 lines 40-52). Malvar discloses that signal enhancement functions are often used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). The enhancement functions are used to transform the signal in order to increase encoding accuracy.

DeJaco and Malvar fail to further fully teach a determining a selected encoding rate from a plurality of encoding rates based on a characteristic of the amplitude adjusted audio data. DeJaco does teach the selection of an encoding rate and an encoding based on a characteristic (DeJaco, abstract). Dejaco, however fail to teach that the decision characteristic is based on amplitude adjusted audio data. Malvar, as shown above, teaches signal enhancement functions including automatic gain control. Therefore, when the pre-emphasis of Malvar is applied to DeJaco, an encoding rate is selected based on at least the pre-emphasized (amplitude adjusted) data and is encoded.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the known enhancement function (Malvar) of adjusting the amplitude of the audio data in DeJaco, since it would improve the system in a similar way, enabling the system to distinguish the unvoiced speech signal from noise then correctly encode the frame at a higher bit rate, thus reducing encoding errors and increasing resolution during speech reconstruction.

As per claim 7, DeJaco discloses a method for preprocessing audio data to be processed by a codec having variable coding rate, wherein the codec is capable of determining whether data fed to the codec is noise signal or not, comprising the steps of:

deciding whether a frame in the audio data would be determined as noise signal when the audio data is encoded by a codec (column 2 lines 15-18 and lines 39-42, the

input signal is analyzed to determine the presence of speech or music. If the input signal is neither speech nor music, then it must be noise or silence with background noise).

DeJaco does not disclose that if the signal is determined as noise signal, preprocessing the frame such that the preprocessed frame is not determined as noise when processed by the codec. However, DeJaco does disclose that previous speech coding systems do not correctly determine when low energy unvoiced speech is input (column 1 lines 40-52). The systems often mistake low energy unvoiced speech as noise and encode the signal at a lower bit rate, causing degradation in speech quality during speech reconstruction (column 1 lines 40-52). Malvar discloses that signal enhancement functions are often used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). The enhancement functions are used to transform the signal in order to increase encoding accuracy.

DeJaco and Malvar fail to fully teach a determining a selected encoding rate from a plurality of encoding rates based on a characteristic of the amplitude adjusted frame. DeJaco does teach the selection of an encoding rate and an encoding based on a characteristic from frames (DeJaco, abstract, column 2, lines 34-42). Dejaco, however fail to teach that the decision characteristic is based on an amplitude adjusted frame. Malvar, as shown above, teaches signal enhancement functions including automatic gain control. Therefore, when the pre-emphasis of Malvar is applied to DeJaco, an encoding rate is selected based on a characteristic of the amplitude adjusted frame.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to preprocess the frame such that the preprocessed frame is not determined as noise when processed by the codec, if the signal is determined to be a noise signal in DeJaco, since it would enable the system to distinguish the unvoiced speech signal from noise then correctly encode the frame at a higher bit rate, thus reducing encoding errors and increasing resolution during speech reconstruction.

As per claim 8, DeJaco discloses:

deciding whether the audio data would be encoded in a low bit rate at a codec having a plurality of coding rates (DeJaco, Fig. 1, encoding rate selection 16);

DeJaco does not disclose the adjustment of an amplitude of audio data if the audio data is to be encoded at a low bit rate, prior to encoding. However, DeJaco does teach the selection of a coding rate based on a characteristic of the audio data. (Dejaco, column 2, lines 34-42). Malvar discloses that signal enhancement functions are often used to enhance a signal prior to processing by the codec, automatic gain control (amplitude adjustment) being one of those functions (column 2 lines 41-51). The enhancement functions are used to transform the signal in order to increase encoding accuracy. Therefore, DeJaco teaches a selection of an encoding rate based on a characteristic and Malvar teaches an amplitude adjustment to improve encoding accuracy.

DeJaco and Malvar fail to further fully teach a determining a selected encoding rate from a plurality of encoding rates based on a characteristic of the amplitude

adjusted audio data. DeJaco does teach the selection of an encoding rate and an encoding based on a characteristic (DeJaco, abstract). Dejaco, however fail to teach that the decision characteristic is based on amplitude adjusted audio data. Malvar, as shown above, teaches signal enhancement functions including automatic gain control. Therefore, when the pre-emphasis of Malvar is applied to DeJaco, an encoding rate is selected based on at least the pre-emphasized (amplitude adjusted) data and is encoded.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the known enhancement function (Malvar) of adjusting the amplitude of the audio data in DeJaco, since it would improve the system in a similar way, enabling the system to distinguish the unvoiced speech signal from noise then correctly encode the frame at a higher bit rate, thus reducing encoding errors and increasing resolution during speech reconstruction.

13. Claims 2, 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeJaco (5,742,734) in view of Malvar (6,029,126), and further in view of Davis (4,539,526).

As per claim 2, DeJaco teaches the method comprising:

classifying the audio data based on a characteristic of the audio data

(column 2 lines 15-18 and lines 39-42, the input signal is analyzed to determine the presence of speech or music then processed accordingly);

DeJaco does not disclose in case the audio data includes monophonic sound, performing AGC (automatic gain control) preprocessing of all frames, and in case the audio data includes polyphonic sound, performing AGC preprocessing of selected frames. Malvar discloses that signal enhancement functions are used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). The automatic gain control would pre-emphasize any frames sent through it and the enhancement functions are used to transform the signal in order to increase encoding accuracy. In addition, Davis discloses a system that performs preemphasis on a signal prior to encoding, the preemphasis based on a ratio of high frequency energy to low frequency energy (column 2 lines 50-67). Davis also discloses that conventionally, preemphasis is used to adjust a signal level to below a maximum level or above a noise level. Monophonic music, having one tone or pitch, would have a constant ratio of high frequency energy to low frequency energy; therefore any preemephasis or preprocessing needed would take place over every frame of the signal. Polyphonic music would have a ratio of high frequency energy to low frequency energy that varies, depending on the tones being played at that time. The amount of preemphasis or preprocessing needed would depend on the tones being played during a particular frame.

DeJaco also fails to fully teach a determining a selected encoding rate from a plurality of encoding rates based on a characteristic of the AGC preprocessed audio

data. DeJaco does teach the selection of an encoding rate and an encoding based on a characteristic (DeJaco, abstract). Dejaco, however fail to teach that the decision characteristic is based on AGC preprocessed audio data. Malvar, as shown above, teaches signal enhancement functions including automatic gain control and Davis teaches preemphasis information in a signal weighting system. Therefore, when the pre-emphasis of Malvar is applied to DeJaco, an encoding rate is selected based on at least the pre-emphasized (AGC preprocessed) data and is encoded.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the gain for all frames in monophonic music and selected frames in polyphonic music in DeJaco, in order to adjust the signal to below a maximum level and above a minimum noise level, thus reducing errors in a bandlimited application, such as encoding and decoding prior to transmission, as indicated in Davis (column 1 lines 31-36 and column 2 lines 46-65).

As per claim 3, DeJaco in view of Malvar and further in view of Davis disclose a method in accordance with claim 2, but DeJaco does not explicitly disclose wherein the step of performing AGC preprocessing of selected frames include deciding whether a frame in the audio data includes noise signal or not. However, DeJaco does disclose determining whether an input signal is noise or not (column 2 lines 15-18 and lines 39-42, the input signal is analyzed to determine the presence of speech or music as compared to background noise. If the input signal is neither speech nor music, then it must be noise or silence with background noise). In addition, Malvar discloses that signal

enhancement functions are used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). The enhancement functions are used to transform the signal in order to increase encoding accuracy.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to determine if an input frame is noise or not during AGC preprocessing in DeJaco, in order to distinguish the unvoiced speech signal from noise, then correctly encode the frame at a higher bit rate, thus reducing errors and increasing resolution once it is decoded.

As per claim 9, DeJaco teaches:

means for classifying the audio data based on the characteristic of the audio data (column 2 lines 15-18 and lines 39-42, *the input signal is analyzed to determine the presence of speech or music then processed accordingly*);

means for deciding an interval of the audio data that is to be encoded in a low bit rate in said codec (column 3 lines 56-65);

DeJaco and Malvar fail to further fully teach a determining a selected encoding rate from a plurality of encoding rates based on a characteristic of the amplitude adjusted audio data. DeJaco does teach the selection of an encoding rate and an encoding based on a characteristic (DeJaco, abstract). Dejaco, however fail to teach that the decision characteristic is based on amplitude adjusted audio data. Malvar, as shown

above, teaches signal enhancement functions including automatic gain control. Therefore, when the pre-emphasis of Malvar is applied to DeJaco, an encoding rate is selected based on at least the pre-emphasized (amplitude adjusted) data and is encoded.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the known enhancement function (Malvar) of adjusting the amplitude of the audio data in DeJaco, since it would improve the system in a similar way, enabling the system to distinguish the unvoiced speech signal from noise then correctly encode the frame at a higher bit rate, thus reducing encoding errors and increasing resolution during speech reconstruction.

DeJaco further does not disclose deciding an interval of the audio data that is to be encoded in a low bit rate in said codec in case the audio data is determined to include polyphonic sound based on the classification, or means for performing AGC preprocessing of all frames before the audio data is subject to the codec in the case audio data is determined to include monophonic sound based on the classification, and performing AGC preprocessing of frames of the decided interval before the audio data is subject to the codec in case the audio data is determined to include polyphonic sound based on the classification. However, DeJaco does disclose that previous speech coding systems do not correctly determine when low energy unvoiced speech is input (column 1 lines 40-52). The systems often mistake low energy unvoiced speech as noise and encode the signal at a lower bit rate, causing degradation in speech quality

during speech reconstruction (column 1 lines 40-52). Malvar discloses that signal enhancement functions are used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). The enhancement functions are used to transform the signal in order to increase encoding accuracy. In addition, Davis discloses a system that performs preemphasis, or preprocessing, on a signal prior to encoding, the preemphasis based on a ratio of high frequency energy to low frequency energy (column 2 lines 50-67). Davis also discloses that conventionally preemphasis is used to adjust a signal level to below a maximum level or above a noise level. Monophonic music, having one tone or pitch, would have a constant ratio of high frequency energy to low frequency energy; therefore any preemephasis or preprocessing needed would take place over every frame of the signal. Polyphonic music would have a ratio of high frequency energy to low frequency energy that varies, depending on the tones being played at that time. The amount of preemphasis or preprocessing needed would depend on the tones being played during a particular frame.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to disclose deciding an interval of the audio data that is to be encoded in a low bit rate in said codec in case the audio data is determined to include polyphonic sound based on the classification, and perform AGC preprocessing of all frames before the audio data is subject to the codec in the case audio data is determined to include monophonic sound based on the classification, and perform AGC preprocessing of frames of the decided interval before the audio data is subject to the codec in case the

audio data is determined to include polyphonic sound based on the classification in DeJaco, in order to adjust the signal to below a maximum level and above a minimum noise level, thus reducing errors in a bandlimited application, such as encoding and decoding prior to transmission, as indicated in Davis (column 1 lines 31-36 and column 2 lines 46-65).

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeJaco in view of Malvar as applied to claim 4 above, and further in view of Forse (4,912,766).

DeJaco in view of Malvar discloses a method in accordance with claim 4, however neither DeJaco nor Melvar further disclose wherein the adjusting step comprises the steps of: calculating signal levels of the audio data, deciding smoothed gain coefficients based on signal levels, and generating preprocessed audio data by multiplying the smoothed gain coefficients to the audio data in the decided interval. However, Malvar discloses that signal enhancement functions are used to enhance a signal prior to processing by the codec, automatic gain control being one of those functions (column 2 lines 41-51). In addition, Forse discloses a system that uses automatic gain control in a speech application (column 1 lines 45-58). The system inputs a speech signal, determines spectral parameters, stores gain coefficients for each spectral parameter then uses the lowest of the gain coefficients to adjust the magnitude of the spectral parameters.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the known technique of determining gain coefficients, and multiplying those coefficients by the input signal in DeJaco, since it would improve the system in a similar way, enabling the system to distinguish the unvoiced speech signal from noise then correctly encode the frame at a higher bit rate, thus reducing encoding errors and increasing resolution during speech reconstruction.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to PTO-892, Notice of References Cited for a listing of analogous art.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREG A. BORSETTI whose telephone number is (571)270-3885. The examiner can normally be reached on Monday - Thursday (8am - 5pm Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg A. Borsetti/
Examiner, Art Unit 2626
/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626